

# Storm Water Pollution Prevention Plan (SWPPP)

In Accordance with

TPDES General Permit No. TXR150000

For Storm Water Discharges Associated with Small Construction Activities

for

Holcombe Drainage and Paving Improvements

WBS No. M-420126-0076-4

**City of Houston, Texas**

**AECOM Technical Services, Inc.  
Project No. 60183142 – 60072625**

**February 2015**

**General Instructions/Information To Contractor Regarding Storm Water Pollution Prevention Plan**

- CONTRACTOR will be responsible for implementing all procedures and controls contained in the attached Storm Water Pollution Prevention Plan.
- All controls described in the Storm Water Pollution Prevention Plan will be constructed and maintained in accordance with the TECHNICAL SPECIFICATIONS.
- Prior to execution of the Contract Documents, CONTRACTOR will provide ENGINEER with a list of subcontractors who will implement any of the measures described in the Storm Water Pollution Prevention Plan, along with the name and title of the individual who will sign for the CONTRACTOR and Subcontractors, the address and phone number of the subcontractors and a brief description of the specific measures for which each subcontractor will be responsible.
- CONTRACTOR will prepare and execute a Notice of Intent (NOI form attached in Storm Water Pollution Prevention Plan in *Attachment C*), and submit it along with the application fee to the Texas Commission on Environmental Quality with executed contract documents.
- Copies of all Inspection Reports and Revisions to the Storm Water Pollution Prevention Plan (as described in Section 4 of the attached Storm Water Pollution Prevention Plan) must be submitted to the OWNER within 2 days after each inspection. Any modifications to the Storm Water Pollution Prevention Plan resulting from inspections shall be implemented within 7 days of the inspection. Forms and Certifications for the Inspection Reports are included in *Attachment B* of the Storm Water Pollution Prevention Plan.
- A copy of the Project Description Sheet included in *Attachment D* in the Storm Water Pollution Prevention Plan and a copy of the NOI must be posted at the Construction site in a permanent place for public viewing. Removal will be as directed by OWNER.
- The complete Storm Water Pollution Prevention Plan (including all amendments, inspection reports and certifications) must be retained on the construction-site at all times during the duration of the Contract.
- If erosion and sedimentation control systems are existing from prior contracts, OWNER and/or OWNER's representative with the CONTRACTOR shall examine the existing erosion and sedimentation control systems for damage prior to CONTRACTOR starting construction of the Contract. Any damage noted at this time shall be repaired at OWNER's expense or by the previous CONTRACTOR.
- Upon completion of the project and prior to OWNER's approval of the final payment, CONTRACTOR will submit a complete copy of the final (updated if necessary) Storm Water Pollution Prevention Plan including copies of all inspection reports, certifications, and amendments to the OWNER and ENGINEER.
- At completion of the contract, OWNER and/or OWNER's Representative with the CONTRACTOR shall examine erosion and sedimentation control systems before relieving CONTRACTOR of any maintenance responsibilities.
- CONTRACTOR will execute a Notice of Termination (NOT form attached in Storm Water Pollution Prevention Plan in *Attachment C*), and submit it to the Texas Commission on Environmental Quality in accordance with the General Permit.

- Note that all certifications, reports, etc. (including the NOI) must be signed in accordance with the signatory requirements of the General Permit. A complete description of these signatory requirements is provided in the instructions accompanying the NOI, which are included in the Storm Water Pollution Prevention Plan, in *Attachment C*.

The General Permit provides that stabilization measures must be initiated on portions of disturbed areas where construction activities have temporarily or permanently ceased as soon as practicable, but no more than 14 days after construction activity on that particular portion of the site has temporarily or permanently ceased unless construction activities will resume on that portion of the site within 21 days from when the construction activities ceased.

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## Section 1 Site Information

### 1.1 Site Description

|           |   |  |
|-----------|---|--|
|           | <u>Project Name and Location:</u>   | <u>Owner Name and Address:</u>   |
| Name:     | Holcombe Drainage & Paving Improvements                                   | City of Houston  |
| Location: | Holcombe Blvd, between Grand Blvd and Almeda Rd (FM 521) in Harris County | Department of Public Works and Engineering<br>611 Walker St, Houston, TX 77002 |

#### 1.1.1 Description of the Construction Activity

The project site is a 2000 linear foot segment of Holcombe Boulevard running east-west between Grand Boulevard and Almeda Rd. The site includes a 600 linear foot segment running north-south at the Holcombe and Grand intersection. Construction activity includes the installation of new/modification of existing storm sewer, storm sewer leads, manholes, and inlets and installation of roadway pavement, curbs, sidewalks, and wheelchair ramps to the lines, grades, elevations and locations shown on the drawings.

#### 1.1.2 Sequence of Major Activities

The project follows a phased work sequence to ensure that excessive disruption in the area is not incurred. The contractor is required to submit an alternate work sequence for review and approval if utilization of the current plan is not elected.

Phase 1: Contractor to remove designated medians and replace as shown with temporary asphalt pavement if needed.

Phase 2: Construction of two northernmost westbound lanes and storm sewer.

Phase 3: Construction of two middle lanes and storm sewer.

Phase 4: Construction of two southernmost eastbound lanes and storm sewer.

Phase 5: Construction of center median.

#### 1.1.3 Estimated Total Site Area, Total Disturbed Area

The total area in the construction project will be 2.5 ac. Under the traffic control plan, only portions of this area will be disturbed at any one time.

#### 1.1.4 Runoff Coefficient

The existing rainfall-runoff coefficient "C" prior to construction was assigned in the drainage study using H-GAC 2012 photography. The rainfall-runoff coefficient "C" was adjusted accordingly to reflect changes in the drainage areas.

Impervious cover values ranged between 0.65 and 0.90, 0.65 for unpaved areas, 0.75 for commercial areas and 0.90 for paved roadway.

### **1.1.5 Site Map**

The SWPPP layout along with City of Houston SWPPP details is included in the plans. Site and general location maps are attached.

### **1.1.6 Name of the Receiving Water**

The drainage for Holcombe Blvd. is carried west through the storm sewer network to Alameda Rd. where it connects with a major trunk line. The Alameda Rd. storm sewer trunk line follows the road north for approximately 200 ft. then turns approximately 60 degrees to the west toward its outfall into Brays Bayou (D100-00-00).

### **1.1.7 Construction General Permit Requirements**

According to the Storm Water Management Handbook for Construction Activities, this project falls under the small construction category (1 to less than 5 acres).

Small Construction Requirements:

1. Obtain a copy of the TCEQ Construction General Permit (TPDES Permit No. TXR150000).
2. Develop and implement a Storm Water Pollution Prevention Plan (SW3P).
3. Complete and post a site notice.

## Section 2 Best Management Practices

### 2.1 Controls

All controls described herein will be constructed and maintained in accordance with Manufacturer's specifications, in accordance with the TECHNICAL SPECIFICATIONS contained in the CONTRACT DOCUMENTS, and with good engineering practice.

IT IS THE RESPONSIBILITY OF THE CONTRACTOR, WHO MANAGES THE DAY-TO-DAY SITE OPERATIONS, TO IMPLEMENT ALL MEASURES AND CONTROLS DESCRIBED IN THIS STORM WATER POLLUTION PREVENTION PLAN.

#### 2.1.1 Erosion and Sediment Controls

Major erosion and sediment controls are shown in the attached SWPPP sheets.

The following short and long term goals and criteria are as follows;

- Sediment will be retained on site to the extent practical
- Control measures will be properly selected, installed, and maintained in accordance with manufactures' specification and good engineering practice.
- If damaged or rendered ineffective, the erosion and sediment controls will be repaired or replaced immediately.
- If sediment escapes the site, off-site accumulations will be removed to minimize off-site impacts.
- Dewatering effluent should be routed through filtration controls. Untreated or direct discharge into a storm sewer will not be allowed.
- Sediment will be removed from sediment traps or sediment ponds when design capacity has been reduced by 50%.
- Litter, construction debris, and construction chemical exposed to storm water will be removed covered or otherwise prevented from becoming a pollutant source.
- Installation of storm water pollution abatement measures will be coordinated with construction sequencing in order to optimize storm water pollution abatement.
- Any existing erosion and sedimentation control systems remaining on project site from prior construction activities shall be examined y contractor for evidence of damage before starting new construction. Any damage noted during inspection shall be reported to owner.
- Soil stockpile erosion shall be controlled with protective coverings and filter fabric fences or other approved storm water pollution abatement installations at contractor's expense.
- Each disturbed area shall be stabilized within 14 days of ceasing construction activities in that area, except locations in which the next construction activity will occur within 21 days of the most recent activity.
- Erosion and sedimentation control installations shall remain in place until final stabilization has occurred in all disturbed areas not covered by pavements or permanent structures. Contractor to ensure final stabilization of disturbed areas in accordance with TCEQ-defined requirements prior to removal of installations.

##### 2.1.1.1 Stabilization Practices

The following stabilization practices will be used:



- a. Stabilized construction exits will be provided at major access points using course aggregate.
- b. The onsite staging and parking area will be stabilized using course aggregate
- c. In completed pavement sections, all disturbed land between the property line and the gutter will be stabilized with sod to minimize erosion and sediment as soon as possible.
- d. At the end of paving work, all disturbed areas that are not paved will be planted with sod.

The following records must be maintained and either attached to or referenced in the SWPPP, and made readily available upon request:

- a. The dates when major grading activities occur;
- b. The dates when construction activities temporarily or permanently cease on a portion of the site; and
- c. The dates when stabilization measure are initiated.

#### **2.1.1.2 Structural Practices**

- a. Inlet Protection Barrier

Contractor shall utilize inlet protection barriers on all inlets, manholes, and pipe stubs during construction of storm sewer. Upon completion of roadway pavement, sand bags shall be placed at proposed inlets. Contractor shall refer to Specs. Doc 01575 for information regarding stabilized construction exits.

All inlet protection should include:

- Proposed Inlets – Stage 1 (Silt Fence) and Stage 2(Sand Bag)
- Existing Inlets – Stage 2 (Sand Bag) only

- b. Reinforced Filter Fabric Fence

Sediments will be trapped in every roadside ditch before entering the underground storm system. Reinforced Filter Fabric Fence will be fastened before every roadside ditch collection point along Grand Blvd.

- c. Vehicle Equipment Wash Area

A vehicle equipment wash area stabilized with course aggregate will be established near the staging/parking area for trucks and equipment leaving the site. Wash water will directed to a sediment trap, and then released into the storm sewer system.

Water pumped from trenches during dewatering operations will be discharges into a sediment tank with eventual discharge into the drainage swales.

- d. Trench Excavation

Trench excavation spoils not immediately hauled off will be backfilled into the trenches in a continuous operation. Excavated material required for backfilling will be placed next to the trenches, but no closer than half the depth of the trench, for safety reasons.

e. Storm Inlet Sediment Traps

The stage I storm sewer inlets will have storm inlet sediment traps to collect sediment before runoff enters the inlets.

**2.1.1.3 Prior to Any Construction**

Prior to any construction Contractor is to coordinate with the City of Houston and the project site nearby owners to designate a staging/parking area.

**2.1.1.4 Permanent Storm Water Controls**

- a. Due to project size and site restrictions, detention, retention and infiltration systems for storm water treatment are not attainable. The sodded landscaping used to the extent practicable for flow attenuation purposes.
- b. Storm water from the roadway and properties within approximately 150 feet will discharge into the new curb and gutter system, and then will tie into an existing storm sewer. No velocity dissipation devices are needed.

**2.1.2 Other Controls**

**2.1.2.1 Waste Disposal**

- a. Waste Materials: All waste materials will be collected and stored in a securely lidded metal dumpster. The dumpster will meet all local and state solid waste management regulations. All trash and construction debris from the site will be deposited in the dumpster. The trash and debris will be hauled to an approved landfill. No construction waste material will be buried on-site. The CONTRACTOR who manages the day-to-day site operations will instruct all personnel regarding the correct procedure for waste disposal.
- b. Hazardous Waste: No hazardous waste is expected to be generated or encountered in this project. In the event that hazardous waste is encountered, all hazardous waste materials will be disposed of in the manner specified by local or state regulation or by the manufacturer. As with all other measures and controls included herein, the CONTRACTOR, who manages the day-to-day site operations, will be responsible for seeing that these practices are followed.
- c. Sanitary Waste: All sanitary waste will be regularly collected from the portable units by a licensed sanitary waste management contractor.

**2.1.2.2 Off-Site Vehicle Tracking**

A stabilized construction entrance has been provided to help reduce vehicle tracking of sediments. A stabilized vehicle/equipment washing area has been provided to help remove dirt and loose material from vehicles and equipment. Wash water will be directed to sediment traps, with eventual discharge into drainage swales. Street sweeping will be done on a daily basis during the construction period on all paved street surfaces in the project site, and to the extent necessary to keep adjacent streets clean of construction debris and soils.

**2.1.2.3 Demonstration of Compliance with State and Local Regulations**

The proposed project will be in compliance with applicable state and local waste disposal and sanitary sewer regulations.

**2.1.2.4 Construction and Waste Materials Stored Onsite.**

Describe construction and waste materials to be stored onsite. Also include a description of spill controls, and exposure minimization measures. This information is to be updated when appropriate. Refer to Section 5.1.7 Non-Storm Water Discharges. Substances expected to be onsite during construction include the following: concrete, detergents, fertilizer, fuels, lubricants, and wood. Spill prevention measures include Good Housekeeping, Hazardous Product Practices, Product Specific Practices, and Spill Prevention Practices.

**2.1.3 Approved State or Local Plans**

This plan was prepared in accordance with the Texas Commission on Environmental Quality Construction General Permit, effective March 5, 2003, as applicable.

This plan also complies with the construction regulations for Harris County, Texas, for Storm Water Quality Management, effective October 1, 2001.

## Section 3

### 3.1 Maintenance

CONTRACTOR IS RESPONSIBLE FOR THE MAINTENANCE OF STORM WATER CONTROLS AND MANAGEMENT MEASURES PRIOR TO FINAL STABILIZATION OF THE DISTURBED AREA.

EROSION AND SEDIMENT CONTROL MEASURES THAT HAVE BEEN IMPROPERLY INSTALLED OR HAVE BEEN DISABLED, RUN-OVER, REMOVED, OR OTHERWISE RENDERED INEFFECTIVE MUST BE REPLACED OR CORRECTED IMMEDIATELY.

#### 3.1.1 Erosion and Sediment Controls to be used on This Project

##### 3.1.1.1 Stabilization Practices

- a. Stabilization of construction exits, staging and parking areas.
- b. Any surface disturbed after stabilization shall be re-stabilized.
- c. Sod Planted on disturbed land between the property line and the gutter as soon as possible.
- d. Sod Planted on all disturbed areas that are not paved, upon completion of paving work.

##### 3.1.1.2 Structural Practices

- a. Diversion swales with reinforced filter fabric barriers or bagged gravel barriers.
- b. Stabilized vehicle/equipment wash area, with wash water directed to a sediment trap, and then released into a diversion swale.
- c. Sediment tank for discharged water from dewatering operations.
- d. Immediate removal of trench excavation spoils or backfilling in a continuous operation.
- e. Storm sewers, gutters, and storm inlet sediment traps for the stage I storm sewer inlets.
- f. Rock Filter Dam

To Maintain the Practices Described on the Preceding Page, the Following Will Be Performed by CONTRACTOR

- 1. All maintenance activities will be performed by the CONTRACTOR in accordance with the TECHNICAL SPECIFICATIONS.
- 2. Maintenance and repairs will be conducted within 24 hours of inspection report (see Section 4 below). Note that this includes maintenance following all storm events of 0.5 inches or greater.
- 3. Sediment will be removed from behind the filter fabric fences when it becomes about one-third of the height of the fence and will be disposed of in accordance with the TECHNICAL SPECIFICATIONS.

4. Sediment will be removed from around the inlet barriers when the storage capacity is approximately 50 percent filled and will be disposed of in accordance with the TECHNICAL SPECIFICATIONS.
5. All temporary controls will be removed after the disturbed areas have been stabilized.

## Section 4

### 4.1 Inspections

EROSION AND SEDIMENT CONTROL MEASURES THAT HAVE BEEN IMPROPERLY INSTALLED OR HAVE BEEN DISABLED, RUN-OVER, REMOVED, OR OTHERWISE RENDERED INEFFECTIVE MUST BE REPLACED OR CORRECTED IMMEDIATELY.

#### 4.1.1 Scope of Inspections

Each CONTRACTOR will designate a qualified person or persons to perform the following inspections:

1. Disturbed areas and areas used for storage of materials that are exposed to precipitation will be inspected for evidence of, or the potential for, pollutants entering the drainage system.
2. Erosion and sediment control measures identified in the plan will be observed to ensure that they are operating correctly.
3. Where discharge locations or points are accessible, they will be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters.
4. Locations where vehicles enter or exit the site will be inspected for evidence of off-site sediment tracking.
5. The vehicle/equipment wash area will be inspected for loss of aggregate, proper drainage, and proper maintenance of sediment trap and washing equipment.

The inspection will be conducted by the responsible person at least once every **14 calendar days** and within 24 hours after the end of a storm of 0.5 inch or greater. Contractor shall provide, at his own expense, a rain tube or other suitable device to measure rainfall.

After a portion of the site is finally stabilized, inspection will be conducted at least once every month.

#### 4.1.2 SW3P Revisions

Based on the results of the inspection, the site description and control measures of this SW3P will be revised as appropriate, but in no case later than 7 calendar days following the inspection.

#### 4.1.3 Inspection Report

A report summarizing the scope of the inspection, name(s) and qualifications of personnel making the inspection, the date(s) of the inspection, major observations relating to the implementation of the SW3P, and actions taken in accordance with section 4.1.2 above will be made and retained as part of the SW3P for at least three years from the date that the site is finally stabilized. The report will be signed in accordance with Part VII.6 of the Construction General Permit.

Copies of the forms to be used for the Inspection and Maintenance report are included in *Appendix B* of this SW3P.

## Section 5

### 5.1 Pollution Prevention Measures for Non-Storm Water Discharges

#### 5.1.1 Inventory for Storm Water Pollution Prevention Plan

The substances listed below are expected to be present on-site during construction:

|             |                   |            |
|-------------|-------------------|------------|
| Concrete    | Aggregate         | Fuels      |
| Paints      | Asphalt           | Wood       |
| Detergents  | Steel products    | Lubricants |
| Fertilizers | Cleaning Solvents |            |

The following are authorized non-storm water discharges anticipated during the project:

- Water for vehicle washing or dust control
- Irrigation drainage for watering vegetation
- Pavement wash water (not from toxic or hazardous spill areas)

These effluents are to be controlled as required to minimize creation of sediment discharge to off-site drainage structures.

#### 5.1.2 Spill Prevention

The following are the material management practices that will be used to reduce the risk of spills or other accidental exposure of the materials and substances described above to storm water runoff.

#### 5.1.3 Good Housekeeping

The following good housekeeping practices will be followed by the CONTRACTOR onsite during the construction project.

1. An effort will be made to store only enough product required to do the job.
2. All materials stored onsite will be stored in a neat, orderly manner in their appropriate containers and, if possible, under a roof or other enclosure.
3. Products will be kept in their original containers with the original manufacturer's labels.
4. Substances will not be mixed with one another unless recommended by the manufacturer.
5. Whenever possible, all of a product will be used up before disposing of the container.
6. Manufacturers' recommendations for proper use and disposal will be followed.
7. The CONTRACTOR will inspect daily to assure proper use and disposal of materials onsite.
8. CONTRACTOR shall locate fuel/material storage areas away from storm water conveyance systems. CONTRACTOR shall use a liner under aboveground storage tanks.

9. CONTRACTOR shall use filter fabric fencing, straw bales, or berms around fuel storage areas.
10. CONTRACTOR shall advise OWNER immediately, verbally, and in writing, of any fuel or toxic material spills onto the project/construction area and the actions taken to remedy the problem.
11. CONTRACTOR is responsible for disposing of fuels, materials, and contaminated excavations in a legally approved manner.
12. CONTRACTOR is responsible for complying with all applicable environmental laws.

#### **5.1.4 Hazardous Products**

These practices will be used by the CONTRACTOR to reduce the risks associated with hazardous materials, if hazardous materials are used.

1. Products will be kept in original containers unless they are not resealable.
2. Original labels and material safety data will be retained.
3. If surplus product must be disposed of, manufacturers' or local and state recommended methods for proper disposal will be followed.

#### **5.1.5 Product-Specific Practices**

The product-specific practices to be followed are listed in Table 1.

#### **5.1.6 Spill-Prevention Practices**

The spill prevention practices to be followed are listed in Table 1.

#### **5.1.7 Other: Non-Storm Water Discharges**

Water line and fire hydrant flushings may be performed during this project. This discharge will be made to the paved areas whenever possible. Inlet protection controls will trap any sediment generated by this activity.

CONTRACTOR should minimize production of dust on the site.



## Section 6

### 6.1 Standard Specifications

#### 6.1.1 Specification References

Refer to City of Houston Standard Construction Specifications for details of the following specifications:

- Section 01410 – TDPES Requirements (See Attachment C)
- Section 01570 – Storm Water Pollution Control
- Section 01575 – Stabilized Construction Exit
- Section 01576 – Waste Material Disposal
- Section 01578 – Control of Ground and Surface Water

#### 6.1.2 Certifications

Any subcontractors employed by the contractor and working on the site will certify that they understand and agree to follow the requirements of the SWPPP developed for this site.

Certification forms required by Contractor in the General Permit are attached in *Appendix A*.  
Certification forms required by Subcontractor and Inspector are also attached in *Appendix B*.

| TABLE 1  |  |
|--|--|
| Product Specific Practices   |  |
| The following product specific practices will be followed on-site:   |  |
| Petroleum Products:  | <p>All on-site vehicles will be monitored for leaks and receive regular preventive maintenance to reduce the chance of leakage. Petroleum products will be stored in tightly sealed containers that are clearly labeled. Any asphalt substances used on-site will be applied according to the manufacturer's recommendations.</p>                  |
| Fertilizers:   | <p>Fertilizers used will be applied only in the minimum amounts recommended by the manufacturer. Once applied, fertilizer will be worked in the soil to limit exposure to storm water. Storage will be in a covered shed. The contents of any partially used bags of fertilizer will be transferred to a sealable plastic bin to avoid spills.</p> |
| Paints:  | <p>All containers will be tightly sealed and stored when not required for use. Excess paint will not be discharged to the storm sewer system but will be properly disposed of according to manufacturers' instructions or State and local regulations.</p>   |
| Concrete Trucks:   | <p>Concrete trucks will not be allowed to wash out or discharge surplus concrete or drum wash water on the site except in area approved by Owners. All concrete waste will be removed from the site.</p>   |
| Spill Prevention Practices   |  |
| <p>In addition to the good housekeeping and material management practices discussed in the previous sections of this plan, the following practices will be followed for spill prevention and cleanup:</p> <ul style="list-style-type: none"> <li>• Manufacturers' recommended methods for spill cleanup will be clearly posted and site personnel will be made aware of the procedures and the location of the information and cleanup supplies.</li> <li>• Materials and equipment necessary for spill cleanup will be kept in the materials storage area on-site. Equipment and materials will include but not be limited to brooms, dustpans, mops, rags, gloves, goggles, kitty litter, sand, sawdust, and plastic and metal trash containers specifically for this purpose.</li> <li>• All spills will be cleaned up immediately after discovery.</li> <li>• The spill area will be kept well ventilated and personnel will wear appropriate protective clothing to prevent injury from contact with a hazardous substance.</li> <li>• Spills of toxic or hazardous material will be reported to the appropriate state or local government agency, regardless of the size.</li> <li>• The spill prevention plan will be adjusted to include measures to prevent this type of spill from reoccurring and how to clean up the spill if there is another one. A description of the spill, what caused it, and the cleanup measures will also be included.</li> <li>• The Contractor's site superintendent is responsible for the day-to-day site operations, will be the spill prevention and cleanup coordinator. He will designate at least one other site personnel who will receive spill prevention and cleanup training. These individuals will each become responsible for all phases of prevention and cleanup. The names of all responsible spill personnel will be posted in the material storage area and in the office trailer on-site.</li> </ul> |  |

**Attachment A**

**TPDES OPERATOR'S INFORMATION**

ATTACHMENT 3

TPDES OPERATOR'S INFORMATION

Owner's Name and Address: City of Houston

Mr. \_\_\_\_\_  
(City Official)

\_\_\_\_\_  
(Department)  
P. O. Box 1562  
Houston, Texas 77251-1562  
(713) 247-1000

Contractors' Names and Addresses:

General Contractor: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
Telephone: \_\_\_\_\_  
\_\_\_\_\_

Site Superintendent: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
Telephone: \_\_\_\_\_  
\_\_\_\_\_

Erosion Control and  
Maintenance Inspection: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
Telephone: \_\_\_\_\_  
\_\_\_\_\_

Subcontractors' Names and Addresses:

|              |              |
|--------------|--------------|
| _____        | _____        |
| _____        | _____        |
| _____        | _____        |
| Phone: _____ | Phone: _____ |

**Note: Insert name, address, and telephone number of person or firms**

ATTACHMENT 4

CONTRACTOR'S / SUBCONTRACTOR'S

CERTIFICATION FOR TPDES PERMITTING

I certify under penalty of law that I understand the terms and conditions of TPDES General Permit No. TXR150000 and the Storm Water Pollution Prevention Plan for the construction site identified as part of this certification.

Signature: \_\_\_\_\_

Name: (printed or typed) \_\_\_\_\_

Title: \_\_\_\_\_

Company: \_\_\_\_\_

Address: \_\_\_\_\_

Date: \_\_\_\_\_

Signature: \_\_\_\_\_

Name: (printed or typed) \_\_\_\_\_

Title: \_\_\_\_\_

Company: \_\_\_\_\_

Address: \_\_\_\_\_

Date: \_\_\_\_\_

Signature: \_\_\_\_\_

Name: (printed or typed) \_\_\_\_\_

Title: \_\_\_\_\_

Company: \_\_\_\_\_

Address: \_\_\_\_\_

Date: \_\_\_\_\_

**Attachment B**

**INSPECTION AND MAINTENANCE REPORT FORMS**

**CITY OF HOUSTON MAINTENANCE REPORT  
EPA NDPES CONSTRUCTION INSPECTION FORM**

ATTACHMENT 6



## City of Houston

Storm Water Pollution Prevention Plan  
Construction Site Inspection Report

TPDES/EPA Permit Number \_\_\_\_\_

COH Storm Water Quality Permit Number \_\_\_\_\_

DATE \_\_\_\_\_

No exceptions noted.

The following must be corrected prior to continuing work:

Public Notice improperly posted

Initial Construction Site Inspection Report information requires updating

Copy of NOI not on site

Storm water pollution prevention plan not on site

Erosion and sediment controls improperly installed

Erosion and sediment control devices improperly maintained

Fueling or washout areas not properly protected

Portocan or other sanitary facilities not properly protected

Self-inspection and maintenance records incomplete

Sediment from site outside area of construction

Other (see description below)

---

Please contact the Storm Water Quality Engineer at  
611 Walker, RA-257, Houston TX 77002  
713-837-7383 fax 713-837-0570

Once the above items have been corrected, call to arrange for reinspection. No further inspections for any construction related activity shall be made until the above items have been corrected.

---

Inspector's Signature

---

Contractor's Signature

---

Inspector's Name

---

Contractor's Name

not present

Distribution Stormwater Quality Engineer, Code Enforcement, Inspector, Operator  
(Operator is Contractor)

Form \_\_\_\_\_ (10-01-01)



# ATTACHMENT 5

## EPA NPDES

### Construction

### Inspection Form



The following inspection is being performed in compliance with Part IV.D.4. of the NPDES Region 6 Storm Water Construction General Permit [63 Fed. Reg. 36502] and being retained in accordance with Part V of the Permit. Qualified personnel (provided by the permittee or cooperatively by multiple permittees) shall inspect disturbed areas of the construction site that have not been finally stabilized, areas used for storage of materials that are exposed to precipitation, placement and effectiveness of structural control measures, and locations where vehicles enter or exit the site. Inspections shall be performed at least once every 14 days and within 24 hours of the end of a storm event of 0.5 inches or greater. Where sites have been temporarily stabilized, runoff is unlikely due to winter conditions, or during seasonal arid periods in arid areas (0-10 inches of rainfall annually) and semi-arid areas (10-20 inches annually) such inspections shall be conducted at least once every month. This form is primarily intended for use with construction projects in Texas and New Mexico. Permittees on Indian Country lands in Oklahoma, Louisiana and Arkansas and some oil and gas facilities in Oklahoma may use this form if they are eligible for this permit. Other facilities need to check with their NPDES authority before using this form.

If you do not know your NPDES Permit Number, contact the NOI Processing Center at (301)495-4145. This form was prepared as an example and it is not a required form for use with the permit. Alternative forms may be used if they contain all of the required information as set forth in the permit. This form and additional information regarding the NPDES Region 6 storm water program may be found on the Internet at <http://www.epa.gov/region6/sw/>. Any person with a complaint about the operation of this facility in regards to this permit should contact EPA Region 6 at (214)665-7112.

|  |   |                             |
|--|---|-----------------------------|
| Permit Number(s) covered by this inspection (e.g. owners, developers, general contractor, builders)  |   |                             |
| Signature and Certification in accordance with Part VI.G of the permit:  | <p>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</p> <p>Signature _____ Date _____</p> |                             |
| Date of Inspection   |   |                             |
| Inspector Name   |   |                             |
| Is there a copy of the permit language with the SWPPP?   | <input type="checkbox"/> YES  | <input type="checkbox"/> NO |
| Is the inspector qualified and are the qualifications documented in the SWPPP?   | <input type="checkbox"/> YES  | <input type="checkbox"/> NO |
| Is an NPDES storm water construction sign posted at the entrance for all permittees?   | <input type="checkbox"/> YES  | <input type="checkbox"/> NO |
| <p>You may want to use EPA Region 6 construction checklist to assure components of the SWPPP are complete. This form, the construction sign, and the checklist are available on the Region 6 NPDES Storm Water Forms and Documents web page which may be found on the internet at <a href="http://www.epa.gov/earth1/r6/6en/w/forms/w.htm">http://www.epa.gov/earth1/r6/6en/w/forms/w.htm</a>. In addition to the checklist, you should provide a narrative (see next page) on the existing Best Management Practices and Structural Controls found during each inspection. Any problems identified in an inspection should be corrected within 7 days. The inspection should cover all components of the SWPPP and all potential pollutants. While eroded soil is the primary pollutant of concern, do not forget to inspect for other pollutant sources such as fuel tanks, paints, solvents, stabilization materials, concrete hardener, batch plants, and construction debris. The inspector will need to update the SWPPP to reflect findings of the inspection. The site map should be updated after an inspection to show controls that have been added or removed, to ensure the site map is kept current in accordance with Part IV.C. of the permit.</p> |   |                             |

Revision 4, March 1, 2000

01410-17  
02-01-2011



**ATTACHMENT 5****Narrative Findings of the inspection:**

Observations should include any findings of Best Management Practices or controls that are not in accordance with the SWPPP. If a control is not in place or failed, observe the reason why. A control removed temporarily for work is not necessarily a violation if properly recorded in the SWPPP. If it has been removed, record why it was removed and, if applicable, when it will be reinstalled. If the control has failed, observe the conditions so a conclusion may be made as to whether the control failed for improper maintenance or improper design. The qualified inspector will know when a failed control is inadequate and should be replaced by an improved control mechanism. Qualified inspectors are to have authority to make changes to the SWPPP to assure compliance. Controls that have not been installed should be given a reason why they are not installed and/or a scheduled date for installation if they are designed for a later phase of construction. After the inspection, the SWPPP and its site map should be updated to reflect current conditions of controls and Best Management Practices at the time of the inspection. This includes removing uninstalled controls from the site map or otherwise denoting on the site map if they are no longer installed if the controls have been removed because they are no longer necessary (e.g. stabilization has been achieved in that area).

Revision 4, March 1, 2000

01410-18  
02-01-2011

**STORM WATER POLLUTION PREVENTION PLAN**  
**Inspection and Maintenance Report**

Project: \_\_\_\_\_

Phase: \_\_\_\_\_

Inspector: \_\_\_\_\_ Date: \_\_\_\_\_

Number of Days Since Last Rainfall \_\_\_\_\_ Amount of Last Rainfall \_\_\_\_\_ Inches

**STABILIZATION MEASURES**

| Area  | Days Since Last Disturbance | Date of Next Disturbance | Stabilized? | Stabilized with? | Condition |
|-------|-----------------------------|--------------------------|-------------|------------------|-----------|
| _____ | _____                       | _____                    | _____       | _____            | _____     |
| _____ | _____                       | _____                    | _____       | _____            | _____     |
| _____ | _____                       | _____                    | _____       | _____            | _____     |

Stabilization Required: \_\_\_\_\_

To Be Performed By: \_\_\_\_\_ On or Before: \_\_\_\_\_

Corrected By: \_\_\_\_\_ On: \_\_\_\_\_

**STRUCTURAL CONTROLS**

**Filter Fabric Fence**

| Location | Bottom of Fabric Still Buried? | Fabric Torn or Sagging? | Posts Tipping Over? | How Deep is the Sediment? |
|----------|--------------------------------|-------------------------|---------------------|---------------------------|
| _____    | _____                          | _____                   | _____               | _____                     |
| _____    | _____                          | _____                   | _____               | _____                     |
| _____    | _____                          | _____                   | _____               | _____                     |

Maintenance Required for Silt Fence: \_\_\_\_\_

To Be Performed By: \_\_\_\_\_ On or Before: \_\_\_\_\_

Corrected By: \_\_\_\_\_ On: \_\_\_\_\_

**Inlet Protection Traps**

| Location | In Place? Condition? | Depth Of Sediment | Condition of Inlet |
|----------|----------------------|-------------------|--------------------|
| _____    | _____                | _____             | _____              |
| _____    | _____                | _____             | _____              |
| _____    | _____                | _____             | _____              |

Maintenance Required for Inlet Protection Traps: \_\_\_\_\_

To Be Performed By: \_\_\_\_\_ On or Before: \_\_\_\_\_

Corrected By: \_\_\_\_\_ On: \_\_\_\_\_

**Inlet Protection Barriers**

| Location | In Place?<br>Condition? | Depth of<br>Sediment | Condition of<br>Inlet |
|----------|-------------------------|----------------------|-----------------------|
|          |                         |                      |                       |
|          |                         |                      |                       |
|          |                         |                      |                       |

Maintenance Required for Inlet Protection Barriers: \_\_\_\_\_

To Be Performed By: \_\_\_\_\_ On or Before: \_\_\_\_\_

Corrected By: \_\_\_\_\_ On: \_\_\_\_\_

**OTHER CONTROLS****Burlap Bag Barriers**

| Location | In Place?<br>Condition? | How Deep<br>is Sediment? |
|----------|-------------------------|--------------------------|
|          |                         |                          |
|          |                         |                          |
|          |                         |                          |

Maintenance Required for Burlap Bag Barriers: \_\_\_\_\_

To Be Performed By: \_\_\_\_\_ On or Before: \_\_\_\_\_

Corrected By: \_\_\_\_\_ On: \_\_\_\_\_

**Stabilized Construction Entrance/Staging Area**

| Does much sediment<br>get tracked onto road? | Entry surface clean<br>or sediment filled? | Does all traffic<br>use entrance? |
|--|--|-----------------------------------|
|  |  |                                   |
|  |  |                                   |
|  |  |                                   |

Maintenance Required for Stabilized Construction Entrance/Staging Area: \_\_\_\_\_

To Be Performed By: \_\_\_\_\_ On or Before: \_\_\_\_\_

Corrected By: \_\_\_\_\_ On: \_\_\_\_\_

Changes Required to the Storm Water Pollution Prevention Plan:

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Reasons for Changes:

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Inspector's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**Attachment C**

**NOTICE OF INTENT  
NOI INSTRUCTIONS  
PAYMENT SUBMITTAL FORM  
NOTICE OF TERMINATION  
NOI INSTRUCTIONS  
CONSTRUCTION SITE NOTICE  
EPA NPDES CONSTRUCTION INSPECTION FORM**

ATTACHMENT 1

|  |   |   |
|--|---|---|
|   | <p><b>Notice of Intent (NOI) for Storm Water Discharges<br/>Associated with Construction Activity under the<br/>TPDES Construction General Permit (TXR150000)</b></p> <p>For help completing this application, read the TXR150000 NOI Instructions<br/>(TCEQ-20022-Instructions).</p> | <p><b>TCEQ Office Use Only</b><br/> TPDES Permit Number: TXR15 _ _ _ _  - NO<br/> GIN Number:  _ _ _ _ _ _ _ _ _ _ </p> |
| <p><b>A. Construction Site Operator</b>    <input type="checkbox"/> New    <input type="checkbox"/> No Change    Customer Reference Number: CN _____</p> <p>Name: _____</p> <p>Mailing Address: _____ City: _____ State: _____ Zip Code: _____</p> <p>Country Mailing Information (if outside USA) Territory: _____ Country Code: _____ Postal Code: _____</p> <p>Phone Number: _____ Extension: _____ Fax Number: _____</p> <p>E-mail Address: _____</p> <p>Type of Operator: <input type="checkbox"/> Individual <input type="checkbox"/> Sole Proprietorship - D.B.A. <input type="checkbox"/> Partnership <input type="checkbox"/> Corporation <input type="checkbox"/> Federal Government<br/> <input type="checkbox"/> State Government <input type="checkbox"/> County Government <input type="checkbox"/> City Government <input type="checkbox"/> Other: _____</p> <p>Independent Operator? <input type="checkbox"/> Yes <input type="checkbox"/> No    Number of Employees: <input type="checkbox"/> 0-20 <input type="checkbox"/> 21-100 <input type="checkbox"/> 101-250 <input type="checkbox"/> 251-500 <input type="checkbox"/> 501 or higher</p> <p>Federal Tax ID: _____ State Franchise Tax ID Number: _____ DUNS Number: _____</p>  |   |   |
| <p><b>B. Billing Address</b></p> <p>Name: _____</p> <p>Mailing Address: _____ City: _____ State: _____ Zip Code: _____</p> <p>Country Mailing Information (if outside USA) Territory: _____ Country Code: _____ Postal Code: _____</p>   |   |   |
| <p><b>C. Project / Site Information</b>    <input type="checkbox"/> New    <input type="checkbox"/> No Change    Regulated Entity Reference Number: RN _____</p> <p>Name: _____</p> <p>Mailing Address: _____ City: _____ State: _____ Zip Code: _____</p> <p>Physical Address: _____ City: _____ County: _____ Zip Code: _____</p> <p>Location Access Description: _____</p> <p>Latitude: _____° _____' _____" N    Longitude: _____° _____' _____" W    Degrees (°), Minutes ('), and Seconds (")<br/> Latitude: _____    Longitude: _____    Decimal Form</p> <p>Standard Industrial Classification (SIC) code: _____ Also, describe the construction activity at this site (do not repeat the SIC code): _____</p> <p>Has a storm water pollution prevention plan been prepared as specified in the general permit (TXR150000)? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Estimated area of land disturbed (to the nearest acre): _____ Is the project / site located on Indian Country Lands? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Does this project / site discharge storm water into a municipal separate storm sewer system (MS4)? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>If yes, provide the name of the MS4 operator: _____</p> <p>Provide the name or segment number of the water body that receives storm water from this project / site: _____</p>  |   |   |
| <p><b>D. Contact</b> - If the TCEQ needs additional information regarding this application, who should be contacted?</p> <p>Name: _____ Title: _____</p> <p>Phone Number: _____ Extension: _____ Fax Number: _____</p> <p>E-mail Address: _____</p>  |   |   |
| <p><b>E. Payment Information</b> - Check / Money Order Number: _____ Name on Check / Money Order: _____</p>  |   |   |
| <p><b>F. Certification</b></p> <p>I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</p> <p><b>Construction Site Operator:</b></p> <p>Prefix: _____ First: _____ Middle: _____<br/> Last: _____ Suffix: _____ Title: _____</p> <p>Signature: _____ Date: _____</p> <p>If you have questions on how to fill out this form or about the storm water program, please contact us at (512) 239-4671.<br/> Individuals are entitled to request and review their personal information that the agency gathers on its forms. They may also have any errors in their information corrected. To review such information, contact us at (512) 239-3282.</p> <p style="text-align: center;">The completed NOI must be mailed to the following address. Use the attached document to submit the \$100 application fee. Please note that the NOI and application fee are submitted separately to different addresses.</p> <p style="text-align: center;"><b>Texas Commission on Environmental Quality<br/> Storm Water &amp; General Permits Team; MC - 228<br/> P.O. Box 13087<br/> Austin, Texas 78711-3087</b></p> |   |   |

**ATTACHMENT 1**

**Texas Commission on Environmental Quality  
Payment Submittal Form**

The storm water application fee shall be sent under separate cover to the Texas Commission on Environmental Quality.

This form must be used to submit your Storm Water Application Fee. Please complete the following information, staple your check in the space provided at the bottom of this document, and mail it to:

**BY REGULAR U.S. MAIL**

Texas Commission on Environmental Quality  
Financial Administration Division  
Cashier's Office, MC-214  
P.O. Box 13088  
Austin, TX 78711-3088

**BY OVERNIGHT/EXPRESS MAIL**

Texas Commission on Environmental Quality  
Financial Administration Division  
Cashier's Office, MC-214  
12100 Park 35 Circle  
Austin, TX 78753

Fee Code: GPA

Storm Water General Permit: TXR150000

Check / Money Order No: \_\_\_\_\_ Amount of Check/Money Order: \_\_\_\_\_

Date of Check or Money Order: \_\_\_\_\_

Name on Check or Money Order: \_\_\_\_\_

Facility / Site Name: \_\_\_\_\_

Facility / Site Physical Address: \_\_\_\_\_

City: \_\_\_\_\_ Zip Code: \_\_\_\_\_

**Staple Check In This Space**

## ATTACHMENT 1

Completing the Notice of Intent for Storm Water Discharges  
Associated with Construction Activity  
under the TPDES Construction General Permit (TXR150000)**A. Construction Site Operator Information****Check boxes and Customer Reference Number**

These boxes designate the operator's status as a TCEQ "customer"—in other words, an individual or business that is involved in an activity that we regulate. We assign each customer a number that begins with "CN," followed by nine digits. **This is not a permit number, registration number, or license number.** In the remainder of this section, we will use "this customer" to mean the operator for Part A of the form.

- If this customer has not been assigned a Customer Reference Number or if this number is unknown, check "New" and leave the space for the Customer Reference Number blank.
- If this customer has already been assigned this number, enter the operator's Customer Reference Number and:
  - Check "No Change" if all the remaining customer information is the same as previously reported. However, you must still complete most blanks in this form for this notice of intent to be valid.
  - If this customer's information has changed since the last time it was reported to the TCEQ, check neither box and complete the remainder of this notice of intent.
- **Do not enter a permit number, registration number, or license number in place of the Customer Reference Number.**

**Name**

Enter the legal name of this customer as authorized to do business in Texas. Include any abbreviations (LLC, Inc., etc.).

**Mailing Address**

Enter a central and general mailing address for this customer to receive mail from the TCEQ. For example, if this customer is a large company, this address might be the corporate or regional headquarters. On the other hand, for a smaller business, this address could be the same as the site address.

**If this is a street address, please follow US Postal Service standards.** In brief, these standards require this information in this order:

- the "house" number—for example, the 1401 in 1401 Main St
- if there is a direction before the street name, the one- or two-letter abbreviation of that direction (N, S, E, W, NE, SE, SW, or NW)
- the street name (if a numbered street, do not spell out the number—for example, 6th St, not Sixth St)
- an appropriate abbreviation of the type of street—for example, St, Ave, Blvd, Fwy, Exwy, Hwy, Cr, Ct, Ln
- if there is a direction after the street name, the one- or two-letter abbreviation of that direction (N, S, E, W, NE, SE, SW, or NW)
- if there is a room number, suite number, or company mail code

**City, State, and ZIP Code**

Enter the name of the city, the two-letter USPS abbreviation for the state (for example, TX), and the ZIP Code. (Enter the full ZIP+4 if you know it.)

**Country Mailing Information**

If this address is **outside** the United States, enter the territory name, country code, and any non-ZIP mailing codes or other non-U.S. Postal Service features here. If this address is **inside** the United States, leave these spaces blank.

**Phone Number and Extension**

This number should correspond to this customer's mailing address given earlier. Enter the area code and phone number here. Leave "Extension" blank if this customer's phone system lacks this feature.

**Fax Number**

This number should correspond to this customer's mailing address given earlier. Enter the area code and fax number here.

**E-mail Address**

As with the mailing address, this should be a general address that is appropriate for e-mail to this customer's central or regional headquarters, if applicable.

**If "No Change" was checked for this customer, you may skip the rest of the fields in this part of the form and continue to the next part of the NOI.**

**Type of Operator**

Check **only one** box.

| Check ...   | if this customer ...   |
|---|--|
| Individual  | is a person and has not established a business to do whatever causes them to be regulated by us.   |
| Sole Proprietorship—D.B.A.                                  | is a business that is owned by only one person and has not been incorporated. This business may: <ul style="list-style-type: none"><li>• be under the person's name</li><li>• have its own name ("doing business as," or d.b.a.)</li><li>• have any number of employees</li></ul>              |
| Partnership   | is a business that is established as a partnership as defined by the Texas Secretary of State's Office   |
| Corporation   | meets all of these conditions: <ul style="list-style-type: none"><li>• is a legally incorporated entity under the laws of any state or country</li><li>• is recognized as a corporation by the Texas Secretary of State</li><li>• has proper operating authority to operate in Texas</li></ul> |
| Federal, state, county, or city government (as appropriate) | is either an agency of one of these levels of government or the governmental body itself (if a utility district, water district, tribal government, college district, council of governments, or river authority, check "Other" and write in the specific type of government.)                 |
| Other   | fits none of the above descriptions. Enter a short description of the type of customer in the blank provided.  |

**Independent Operator?**

Check "No" if this customer is a subsidiary or part of a larger company. Otherwise, check "Yes."

**Number of Employees**

Check one box to show the number of employees for this customer's entire company, at all locations. **This is not necessarily the number of employees at the site named in this NOI.**

**Federal Tax ID**

All businesses, except for some small sole proprietors, should have a federal taxpayer identification number (TIN). Enter this number here. Use no prefixes, dashes, or hyphens. Individuals and sole proprietors do not need to provide a federal tax ID.

**State Franchise Tax ID**

Corporations and limited liability companies that operate in Texas are issued a franchise tax identification number. If this customer is a corporation or limited liability company, enter this number here.

**DUNS Number**

Most businesses have a DUNS (Data Universal Numbering System) number issued by Dun and Bradstreet Corp. If this customer has one, enter it here.

**B. Billing Address**

We will mail the annual fee invoice for this site to the address entered in this section.

**Name**

Enter the legal name of the person or business to which we should mail this site's fee invoice each year.

**Mailing Address**

Enter the specific mailing address to which we should mail this site's fee invoice each year. If this is a street address, please follow the US Postal Service standards as described under "A. Construction Site Operator Information" on page 1 of these instructions.

**City, State, and ZIP Code**

Enter the name of the city, the two-letter USPS abbreviation for the state (for example, TX), and the ZIP Code. (Enter the full ZIP+4 if you know it.)

**Country Mailing Information**

If this address is **outside** the United States, enter the territory name, country code, and any non-ZIP mailing codes or other non-U.S. Postal

## ATTACHMENT 1

Service features here. If this address is *inside* the United States, leave these spaces blank.

**C. Project / Site Information****Check boxes and Regulated Entity Reference Number**

These boxes designate this site's status as a TCEQ "regulated entity"—in other words, a location where an activity that we regulate occurs. We assign each regulated entity a number that begins with "RN," followed by nine digits. **This is not a permit number, registration number, or license number.**

- If this site has not been assigned a Regulated Entity Reference Number or if this number is unknown, check "New" and leave the space for the Regulated Entity Reference Number blank.
- If this site has already been assigned this number, enter the Regulated Entity Reference Number and:
  - Check "No Change" if all the remaining information is the same as previously reported. However, even if there has been no change, you must complete this section at least through "E-mail Address" for this NOI to be valid.
  - If this site's information has changed since the last time it was reported to the TCEQ, check neither box and complete the remainder of this notice of intent.
- **Do not enter a permit number, registration number, or license number in place of the Regulated Entity Reference Number.**

**Name**

Enter the name by which you want this site to be known to the TCEQ.

**Mailing Address**

Enter the specific mailing address for this site. If this is a street address, please follow the US Postal Service standards as described under "A. Construction Site Operator Information" on page 1 of these instructions. If the project / site's mailing address is the same as what is provided in Section A, you may enter "Same as Section A".

**City, State, and ZIP Code**

Enter the name of the city, the two-letter USPS abbreviation for the state (for example, TX), and the ZIP Code. (Enter the full ZIP+4 if you know it.)

**Physical Address**

Enter the physical address of the site itself. TCEQ staff should be able to use this address to find the site. Please follow the US Postal Service standards as described under "A. Construction Site Operator Information" on page 1 of these instructions. If the project / site does not have a physical address, enter "No Address".

**City, County, and ZIP Code**

Enter the name of the city, the county, and the ZIP Code. (Enter the full ZIP+4 if you know it.) This information must be provided even if you have entered "No Address" in the previous field.

**Location Access Description**

Enter a physical description of the location of the site based on highway intersections and/or permanent landmarks.

**Latitude and Longitude**

Enter the latitude and longitude of the site in *either* degrees, minutes, and seconds *or* decimal form.

For help obtaining the latitude and longitude, go to:

<http://www.tnrc.state.tx.us/gis/drgview.html>

**Standard Industrial Classification (SIC) Code and Activity Description**

Provide the SIC code that best describes the construction activity being conducted at the site.

For help with SIC codes, go to:

<http://www.osha.gov/oshstats/sicser.html>

In addition to the SIC code, you must also provide a description of the construction activity being conducted at the site. This may include such descriptions as: "Apartment Building Construction" or "Shopping Center Construction."

**Storm Water Pollution Prevention Plan**

This plan identifies the areas and activities that could produce contaminated runoff at your site and then tells how you will ensure that this contamination is mitigated. For example, in describing your mitigation measures, your site's plan might identify the devices that collect and filter storm water, tell how those devices are to be maintained, and tell how frequently that maintenance is to be carried out. **You must develop this plan before you complete this NOI.** This plan must be available for a TCEQ investigator to review on request. Specific requirements for the development of the plan

can be found in the *Texas Pollutant Discharge Elimination System Construction General Permit (TXR150000)*.

**Estimated Area of Land Disturbed**

Provide the approximate number of acres that the construction site will disturb. It is appropriate to enter a value less than 5, only if the project is part of a larger common plan that disturbs five or more acres. If the acreage is less than 1, enter 1. "Disturb" means any clearing, grading, excavating, or other similar activities.

**Is the site located on Indian Country Lands?**

Check "Yes" only if the site is on a reservation or other areas designated by the federal government as Indian Country Lands. If not, check "No."

**Destination of Storm Water Discharge**

The storm water from your site eventually reaches a receiving water body such as a local stream or lake, possibly via a drainage ditch. The discharge may initially be into a municipal separate storm sewer system (MS4). Check the appropriate boxes for whether storm water is discharged into an MS4. If you checked "Yes" to "An MS4?", then enter the name of the entity that operates the storm sewer—often a city, town, or utility district, but possibly another form of government.

You must also provide the name of the water body that receives the discharge from the construction site (a local stream or lake). Storm water may be discharged directly to a receiving stream or via a storm sewer system. If known, please include the segment number if the discharge is to a classified water body.

For a map that includes segment numbers, go to:

<http://www.tnrc.state.tx.us/water/quality/data/index.html>

**D. Contact**

Give all the relevant information for the person whom TCEQ can contact if there are questions about any of the information on this form—perhaps the same person who completed the form.

**E. Payment Information**

Provide the number and account holder name from the check or money order used to pay the \$100 application fee.

**F. Certification**

The operator must sign and date this statement to validate this NOI. Be sure to enter the full legal name of the person signing the form and the relevant title—for example, "Operator," "Vice-President," or "Partner." Use the "Prefix" blank for such titles as Dr., Mr., or Ms., as desired. Use the "Suffix" blank for such designations as Ph.D., Jr., Sr., III, or J.D., if applicable.

For a corporation, the application shall be signed by a responsible corporate officer. A responsible corporate officer means a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or the manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding \$25 million (in second-quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures. Corporate procedures governing authority to sign permit applications may provide for assignment or delegation to applicable corporate positions rather than to specific individuals.

For a partnership or sole proprietorship, the application shall be signed by a general partner or the proprietor, respectively.

For a municipality, state, federal, or other public agency, the application shall be signed by either a principal executive officer or a ranking elected official. For purposes of this application, a principal executive officer of a federal agency includes the chief executive officer of the agency, or a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., regional administrator of the United States Environmental Protection Agency).

**Questions?**

If you have questions about any of the information on this form, contact our Storm Water Program at 512/239-4671 or look for "Storm Water" on our Web site.

[www.tceq.state.tx.us](http://www.tceq.state.tx.us)



ATTACHMENT 2



# CONSTRUCTION SITE NOTICE

FOR THE  
Texas Commission on Environmental Quality (TCEQ)  
Storm Water Program  
**TPDES GENERAL PERMIT TXR150000**

The following information is posted in compliance with **Part II.D.2.** of the TCEQ General Permit Number TXR150000 for discharges of storm water runoff from construction sites. Additional information regarding the TCEQ storm water permit program may be found on the internet at:

[www.tnrcc.state.tx.us/permitting/waterperm/wwperm/tpdestorm](http://www.tnrcc.state.tx.us/permitting/waterperm/wwperm/tpdestorm)

|  |  |
|--|--|
| Contact Name and Phone Number:   |  |
| Project Description:<br><br>(Physical address or description of the site's location, estimated start date and projected end date, or date that disturbed soils will be stabilized) |  |
| Location of Storm Water Pollution Prevention Plan :  |  |

For Construction Sites Authorized Under Part II.D.2. (Obtaining Authorization to Discharge) the following certification must be completed:

I \_\_\_\_\_ (Typed or Printed Name Person Completing This Certification) certify under penalty of law that I have read and understand the eligibility requirements for claiming an authorization under Part II.D.2. of TPDES General Permit TXR150000 and agree to comply with the terms of this permit. A storm water pollution prevention plan has been developed and implemented according to permit requirements. A copy of this signed notice is supplied to the operator of the MS4 if discharges enter an MS4 system. I am aware there are significant penalties for providing false information or for conducting unauthorized discharges, including the possibility of fine and imprisonment for knowing violations.

\_\_\_\_\_  
Signature and Title

\_\_\_\_\_  
Date

ATTACHMENT 7



**Notice of Termination (NOT) for Storm  
Water Discharges Associated with  
Construction Activity under the TPDES  
Construction General Permit (TXR150000)**

For help completing this application, read the TXR150000 NOI Instructions (TCEQ-20023-Instructions).

**TCEQ Office Use Only**

TPDES Permit Number: TXR15: \_\_\_\_ - NO

GIN Number: \_\_\_\_

**A. TPDES Permit Number:** TXR15 \_\_\_\_\_

**B. Construction Site Operator**

Customer Reference Number: CN \_\_\_\_\_

Name: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

City: \_\_\_\_\_ State: -- \_\_\_\_\_ Zip Code: \_\_\_\_\_

Country Mailing Information (if outside USA) Territory: \_\_\_\_\_ Country Code: \_\_\_\_\_ Postal Code: \_\_\_\_\_

Phone Number: \_\_\_\_\_ Extension: \_\_\_\_\_ Fax Number: \_\_\_\_\_

E-mail Address: \_\_\_\_\_

**C. Project / Site Information**

Regulated Entity Reference Number: RN \_\_\_\_\_

Name: \_\_\_\_\_

Physical Address: \_\_\_\_\_

Location Access Description: \_\_\_\_\_

City: \_\_\_\_\_ County: -- \_\_\_\_\_ Zip Code: \_\_\_\_\_

**D. Contact** - If the TCEQ needs additional information regarding this termination, who should be contacted?

Name: \_\_\_\_\_ Title: \_\_\_\_\_

Phone Number: \_\_\_\_\_ Extension: \_\_\_\_\_ Fax Number: \_\_\_\_\_

E-mail Address: \_\_\_\_\_

**E. Certification**

I certify under penalty of law that authorization under the TPDES Construction General Permit (TXR150000) is no longer necessary based on the provisions of the general permit. I understand that by submitting this Notice of Termination, I am no longer authorized to discharge storm water associated with construction activity under the general permit TXR150000, and that discharging pollutants in storm water associated with construction activity to waters of the U.S. is unlawful under the Clean Water Act where the discharge is not authorized by a TPDES permit. I also understand that the submittal of this Notice of Termination does not release an operator from liability for any violations of this permit or the Clean Water Act.

**Construction Site Operator Representative:**

Prefix: \_\_\_\_\_ First: \_\_\_\_\_ Middle: \_\_\_\_\_

Last: \_\_\_\_\_ Suffix: \_\_\_\_\_

Title: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

If you have questions on how to fill out this form or about the storm water program, please contact us at (512) 239-4671. Individuals are entitled to request and review their personal information that the agency gathers on its forms. They may also have any errors in their information corrected. To review such information, contact us at (512) 239-3282.

The completed NOT must be mailed to the following address:

**Texas Commission on Environmental Quality  
Storm Water & General Permits Team; MC - 228  
P.O. Box 13087  
Austin, Texas 78711-3087**

ATTACHMENT 7

Completing the Notice of Termination for Storm Water Discharges  
Associated with Construction Activity  
under the TPDES Construction General Permit (TXR150000)

**Who May File a Notice of Termination (NOT) Form**

Permittees disturbing 5 acres or more (or part of a larger common plan of development or sale disturbing 5 acres or more) who are presently covered under the Texas Pollutant Discharge Elimination System (TPDES) Construction General Permit must submit a Notice of Termination (NOT) when final stabilization has been achieved on all portions of the site that is the responsibility of the permittee; or another permitted operator has assumed control over all areas of the site that have not been finally stabilized and all silt fences and other temporary erosion controls have either been removed, scheduled for removal as defined in the SWP3, or transferred to a new operator if the new operator has sought permit coverage. Erosion controls that are designed to remain in place for an indefinite period, such as mulches and fiber mats, are not required to be removed or scheduled for removal.

**Final Stabilization** occurs when either of the following conditions are met:

- (a) All soil disturbing activities at the site have been completed and a uniform (e.g., evenly distributed, without large bare areas) perennial vegetative cover with a density of 70% of the native background vegetative cover for the area has been established on all unpaved areas and areas not covered by permanent structures, or equivalent permanent stabilization measures (such as the use of riprap, gabions, or geotextiles) have been employed.
- (b) For individual lots in a residential construction site by either:
  - (1) the homebuilder completing final stabilization as specified in condition (a) above; or
  - (2) the homebuilder establishing temporary stabilization for an individual lot prior to the time of transfer of the ownership of the home to the buyer and after informing the homeowner of the need for, and benefits of, final stabilization.
- (c) For construction activities on land used for agricultural purposes (e.g., pipelines across crop or range land), final stabilization may be accomplished by returning the disturbed land to its preconstruction agricultural use. Areas disturbed that were not previously used for agricultural activities, such as buffer strips immediately adjacent to a surface water and areas which are not being returned to their preconstruction agricultural use must meet the final stabilization conditions of condition (a) above.

**A. TPDES Permit Number**

Provide the TPDES permit number assigned to the operator of the construction site.

**B. Construction Site Operator Information**

**Customer Reference Number**

This number designates the operator's status as a TCEQ "customer"—in other words, an individual or business that is involved in an activity that we regulate. We assign each customer a number that begins with "CN," followed by nine digits. ***This is not a permit number, registration number, or license number.*** In the remainder of this section, we will use "this customer" to mean the operator for Part B of the form.

- If this customer has not been assigned a Customer Reference Number, leave the space for the Customer Reference Number blank.
- If this customer has already been assigned this number, enter the operator's Customer Reference Number.
- ***Do not enter a permit number, registration number, or license number in place of the Customer Reference Number.***

**Name**

Enter the legal name of this customer as authorized to do business in Texas. Include any abbreviations (LLC, Inc., etc.).

**Mailing Address**

Enter a central and general mailing address for this customer to receive mail from the TCEQ. For example, if this customer is a large company, this address might be the corporate or regional headquarters. On the other hand, for a smaller business, this address could be the same as the site address.

***If this is a street address, please follow US Postal Service standards.*** In brief, these standards require this information in this order:

- the "house" number—for example, the 1401 in 1401 Main St
- if there is a direction before the street name, the one- or two-letter abbreviation of that direction (N, S, E, W, NE, SE, SW, or NW)
- the street name (if a numbered street, do not spell out the number—for example, 6th St, not Sixth St)
- an appropriate abbreviation of the type of street—for example, St, Ave, Blvd, Fwy, Exwy, Hwy, Cr, Ct, Ln
- if there is a direction after the street name, the one- or two-letter abbreviation of that direction (N, S, E, W, NE, SE, SW, or NW)
- if there is a room number, suite number, or company mail code

**City, State, and ZIP Code**

Enter the name of the city, the two-letter USPS abbreviation for the state (for example, TX), and the ZIP Code. (Enter the full ZIP+4 if you know it.)

## ATTACHMENT 7

**Country Mailing Information**

If this address is **outside** the United States, enter the territory name, country code, and any non-ZIP mailing codes or other non-U.S. Postal Service features here. If this address is **inside** the United States, leave these spaces blank.

**Phone Number and Extension**

This number should correspond to this customer's mailing address given earlier. Enter the area code and phone number here. Leave "Extension" blank if this customer's phone system lacks this feature.

**Fax Number**

This number should correspond to this customer's mailing address given earlier. Enter the area code and fax number here.

**E-mail Address**

As with the mailing address, this should be a general address that is appropriate for e-mail to this customer's central or regional headquarters, if applicable.

**C. Project / Site Information****Regulated Entity Reference Number**

This number designates this site's status as a TCEQ "regulated entity"—in other words, a location where an activity that we regulate occurs. We assign each regulated entity a number that begins with "RN," followed by nine digits. ***This is not a permit number, registration number, or license number.***

- If this site has not been assigned a Regulated Entity Reference Number, leave the space for the Regulated Entity Reference Number blank.
- If this site has already been assigned this number, enter the Regulated Entity Reference Number.
- ***Do not enter a permit number, registration number, or license number in place of the Regulated Entity Reference Number.***

**Name**

Enter the name by which you want this site to be known to the TCEQ.

**Physical Address**

Enter the physical address of the site itself. TCEQ staff should be able to use this address to find the site.

**Location Description**

Enter a physical description of the location of the site based on highway intersections and/or permanent landmarks.

**City, County, and ZIP Code**

Enter the name of the city, the county, and the ZIP Code. (Enter the full ZIP+4 if you know it.)

**D. Contact**

Give all the relevant information for the person whom TCEQ can contact if there are questions about any of the information on this form—perhaps the same person who completed the form.

**E. Certification**

The operator must sign and date this statement to validate this NOI. Be sure to enter the full legal name of the person signing the form and the relevant title—for example, "Operator," "Operator's attorney," or "Senior Site Manager." Use the "Prefix" blank for such titles as Dr., Mr., or Ms., as desired. Use the "Suffix" blank for such designations as Ph.D., Jr., Sr., III, or J.D., if applicable.

For a corporation, the application shall be signed by a responsible corporate officer. A responsible corporate officer means a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or the manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding \$25 million (in second-quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures. Corporate procedures governing authority to sign permit applications may provide for assignment or delegation to applicable corporate positions rather than to specific individuals.

For a partnership or sole proprietorship, the application shall be signed by a general partner or the proprietor, respectively.

For a municipality, state, federal, or other public agency, the application shall be signed by either a principal executive officer or a ranking elected official. For purposes of this application, a principal executive officer of a federal agency includes the chief executive officer of the agency, or a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g. regional administrator of the United States Environmental Protection Agency).

**Questions?**

If you have questions about any of the information on this form, contact our Storm Water Program at 512/239-4671 or look for "Storm Water" on our Web site:

[www.tceq.state.tx.us](http://www.tceq.state.tx.us)

**Attachment D**

**Project Description Sheet**

## **Storm Water Pollution Prevention Plan**

### **Project Description to Be Posted On-Site**

#### **Project Description:**

Site: Holcombe Drainage and Paving Improvements

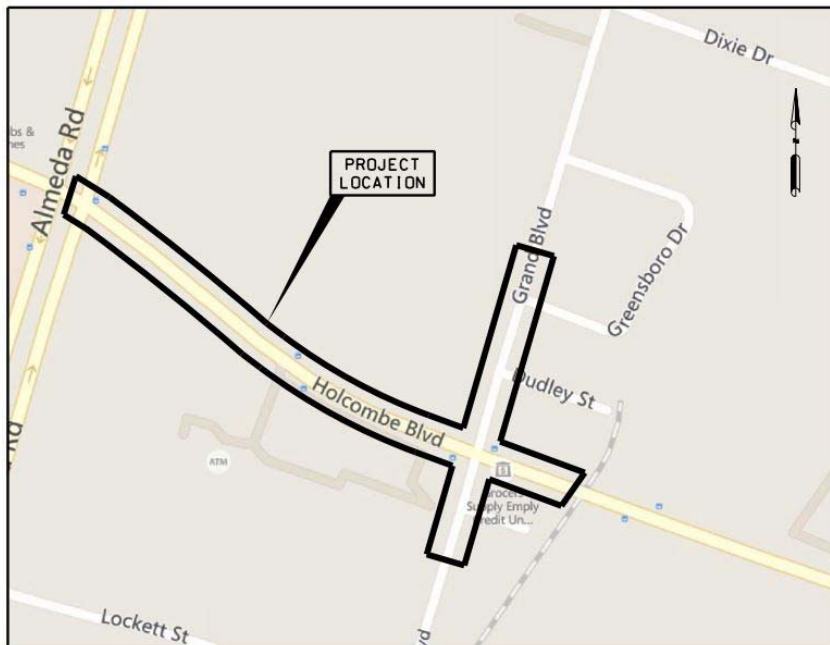
Location: The project site is a 2000 linear foot segment of Holcombe Boulevard running east-west between Grand Boulevard and Almeda Rd. The site includes a 600 linear foot segment running north-south at the Holcombe and Grand intersection. Construction activity includes the installation of new/modification of existing storm sewer, storm sewer leads, manholes, and inlets and installation of roadway pavement, curbs, sidewalks, and wheelchair ramps to the lines, grades, elevations and locations shown on the drawings.

Latitude 29°42'##" North, Longitude 95°22' ##" West

The proposed project is a City of Houston Capital Improvement Project for the Houston Storm Drainage Program, Department of Public Works and Engineering.

The purpose of the project is to construct storm drainage improvements that address and reduce the risk of structural flooding in the area by improving street conveyance and sheet flow. Additionally, project improves mobility of traffic through the intersection of Holcombe and Grand, including emergency vehicles. The benefitted area of the project includes parcels adjacent to Holcombe. Work of the Contract is for construction of Holcombe Drainage and Paving Improvements Project, WBS No. M-420126-0076-4.

Erosion and sediment controls will be installed. All disturbed areas will be stabilized.



VICINITY MAP

KEY MAP NO 533 F  
GIMS MAP NO 5355 D  
COUNCIL DISTRICT D

**Attachment E**

**Runoff Coefficient Sheet**





Water

TBPE Reg. No. F-3580

Prepared for:  
Storm Drainage Program Support  
City of Houston  
Houston, Texas  
WBS No. M-000126-0076-3  
Contract # C55495

Prepared by:  
AECOM  
Houston, Texas  
60183142  
July 2014

# **Holcombe and Grand Drainage Improvement Project**

Houston, Texas

**Table 2-1: Green & Ampt Loss Parameters for All Drainage Areas**

| Parameter  | Initial Loss (in) | Moisture Deficit | Suction (in) | Conductivity (in/hr) |
|------------|-------------------|------------------|--------------|----------------------|
| Value Used | 0.1               | 0.385            | 12.45        | 0.024                |

Along with the drainage area parameters described above, a spreadsheet was used to vary the Clark Unit Hydrograph's Storage Coefficient,  $R$ , until the peak flow from the drainage area closely matched the Rational Method calculated value. A unique storage coefficient was developed for each drainage area for each storm in order to match the peak flow from each storm. **Table 2-2** through **Table 2-5** summarize the hydrologic parameters and peak flows for each of the drainage areas. For Proposed conditions, only the revised drainage areas shown in **Exhibit 5** are tabulated. All other drainage area hydrology results are the same for existing and proposed conditions.

Drainage area C1 was divided into 7 subareas (A through F, and Offsite). The Rational Method parameters from the Walter P. Moore study were used to prepare a hydrograph for the C1 drainage area, and the resulting hydrograph was applied at the six locations within the study area, based on the percentage of the total drainage area of C1. Subareas C1\_A through C1\_F have areas of 11.00, 5.19, 3.91, 2.88, 2.88, and 10.53 acres, respectively. The remaining area is outside the study area.

**Table 2-2: Summary of Existing Conditions Hydrologic Parameters**

| Drainage Area ID | Area (ac) | Tc (hr) | Impervious Cover (%) | C    | Storage Coefficient |        |         |         |          |
|------------------|-----------|---------|----------------------|------|---------------------|--------|---------|---------|----------|
|                  |           |         |                      |      | 2-year              | 5-year | 10-year | 25-year | 100-year |
| A17E1            | 5.92      | 0.17    | 82                   | 0.69 | 0.163               | 0.208  | 0.217   | 0.224   | 0.252    |
| A17E10           | 3.91      | 0.34    | 60                   | 0.56 | 0.398               | 0.484  | 0.507   | 0.526   | 0.593    |
| A17E10_Rd1       | 0.50      | 0.17    | 89                   | 0.73 | 0.140               | 0.185  | 0.188   | 0.185   | 0.216    |
| A17E11           | 2.30      | 0.17    | 60                   | 0.56 | 0.256               | 0.320  | 0.338   | 0.358   | 0.405    |
| A17E11_Rd1       | 0.34      | 0.17    | 90                   | 0.74 | 0.124               | 0.161  | 0.168   | 0.186   | 0.205    |
| A17E12_1         | 0.42      | 0.17    | 60                   | 0.56 | 0.245               | 0.344  | 0.353   | 0.341   | 0.406    |
| A17E12_2         | 2.10      | 0.18    | 60                   | 0.56 | 0.266               | 0.338  | 0.355   | 0.366   | 0.415    |
| A17E12_Rd1       | 0.23      | 0.17    | 88                   | 0.73 | 0.163               | 0.201  | 0.178   | 0.210   | 0.216    |
| A17E13           | 1.90      | 0.21    | 61                   | 0.56 | 0.291               | 0.360  | 0.379   | 0.397   | 0.450    |
| A17E13_Rd1       | 0.16      | 0.17    | 89                   | 0.73 | 0.122               | 0.184  | 0.184   | 0.197   | 0.206    |
| A17E2            | 3.98      | 0.24    | 67                   | 0.6  | 0.277               | 0.342  | 0.356   | 0.370   | 0.417    |
| A17E3            | 3.74      | 0.17    | 86                   | 0.72 | 0.148               | 0.187  | 0.194   | 0.201   | 0.226    |
| A17E4            | 1.81      | 0.26    | 67                   | 0.6  | 0.288               | 0.364  | 0.378   | 0.391   | 0.438    |
| A17E5            | 3.07      | 0.32    | 65                   | 0.59 | 0.343               | 0.413  | 0.438   | 0.453   | 0.514    |
| A17E5_Rd         | 0.32      | 0.17    | 88                   | 0.73 | 0.133               | 0.198  | 0.199   | 0.185   | 0.223    |
| A17E6            | 1.18      | 0.17    | 87                   | 0.72 | 0.146               | 0.186  | 0.199   | 0.199   | 0.228    |
| A17E7            | 0.31      | 0.17    | 86                   | 0.72 | 0.152               | 0.180  | 0.180   | 0.193   | 0.228    |
| A17E7_Rd         | 0.31      | 0.17    | 90                   | 0.74 | 0.153               | 0.181  | 0.181   | 0.194   | 0.203    |
| A17E8            | 1.60      | 0.17    | 60                   | 0.56 | 0.264               | 0.322  | 0.339   | 0.352   | 0.402    |
| A17E8_Rd         | 0.28      | 0.17    | 88                   | 0.73 | 0.147               | 0.164  | 0.193   | 0.198   | 0.223    |
| A17E9            | 3.26      | 0.17    | 61                   | 0.57 | 0.249               | 0.310  | 0.329   | 0.344   | 0.386    |
| A17E9_Rd         | 0.19      | 0.17    | 90                   | 0.74 | 0.139               | 0.160  | 0.172   | 0.197   | 0.224    |
| C1               | 39.69     | 0.57    | 75                   | 0.65 | 0.433               | 0.512  | 0.536   | 0.554   | 0.625    |

Table 2-3: Summary of Proposed Conditions Hydrologic Parameters (Revised Areas Only)

| Drainage Area ID | Area (ac) | tc (hr) | Impervious Cover (%) | C    | Storage Coefficient |        |         |         |          |
|------------------|-----------|---------|----------------------|------|---------------------|--------|---------|---------|----------|
|                  |           |         |                      |      | 2-year              | 5-year | 10-year | 25-year | 100-year |
| A17E3            | 3.47      | 0.17    | 86                   | 0.71 | 0.152               | 0.194  | 0.202   | 0.209   | 0.236    |
| A17E3_Rd         | 0.27      | 0.17    | 89                   | 0.74 | 0.132               | 0.183  | 0.173   | 0.178   | 0.201    |
| A17E5_Rd         | 0.22      | 0.17    | 89                   | 0.73 | 0.136               | 0.169  | 0.187   | 0.175   | 0.214    |
| A17E6            | 0.68      | 0.17    | 87                   | 0.72 | 0.149               | 0.185  | 0.190   | 0.207   | 0.221    |
| A17E6_2          | 0.24      | 0.17    | 85                   | 0.71 | 0.176               | 0.215  | 0.192   | 0.226   | 0.233    |
| A17E6_Rd         | 0.26      | 0.17    | 90                   | 0.74 | 0.157               | 0.164  | 0.190   | 0.190   | 0.209    |
| A17E7_Rd         | 0.21      | 0.17    | 90                   | 0.74 | 0.125               | 0.155  | 0.172   | 0.201   | 0.197    |
| A17E8_Rd         | 0.18      | 0.17    | 87                   | 0.72 | 0.171               | 0.179  | 0.186   | 0.207   | 0.226    |
| A17E8_Rd2        | 0.21      | 0.17    | 88                   | 0.73 | 0.120               | 0.198  | 0.166   | 0.194   | 0.229    |
| A17E9_Rd         | 0.16      | 0.17    | 90                   | 0.74 | 0.130               | 0.194  | 0.195   | 0.209   | 0.218    |
| A17E9_Rd2        | 0.13      | 0.17    | 90                   | 0.74 | 0.130               | 0.180  | 0.170   | 0.175   | 0.228    |

Table 2-4: Summary of Existing Conditions Peak Flows

| Drainage Area ID | Rational Peak Flow (cfs) |        |         |         |          | Hydrograph Peak Flows (cfs) |        |         |         |          |
|------------------|--------------------------|--------|---------|---------|----------|-----------------------------|--------|---------|---------|----------|
|                  | 2-year                   | 5-year | 10-year | 25-year | 100-year | 2-year                      | 5-year | 10-year | 25-year | 100-year |
| A17E1            | 20.3                     | 25.0   | 28.2    | 32.2    | 38.2     | 19.4                        | 24.5   | 27.7    | 31.7    | 37.9     |
| A17E10           | 8.2                      | 10.4   | 11.9    | 13.8    | 16.6     | 8.1                         | 10.3   | 11.9    | 13.8    | 16.6     |
| A17E10_Rd1       | 1.8                      | 2.2    | 2.5     | 2.9     | 3.4      | 1.7                         | 2.1    | 2.4     | 2.8     | 3.3      |
| A17E11           | 6.4                      | 7.9    | 8.9     | 10.1    | 12.0     | 6.3                         | 7.9    | 8.9     | 10.1    | 12.0     |
| A17E11_Rd1       | 1.3                      | 1.6    | 1.8     | 2.0     | 2.4      | 1.2                         | 1.5    | 1.7     | 1.9     | 2.4      |
| A17E12_1         | 1.2                      | 1.4    | 1.6     | 1.9     | 2.2      | 1.2                         | 1.4    | 1.6     | 1.9     | 2.2      |
| A17E12_2         | 5.7                      | 7.0    | 7.9     | 9.1     | 10.8     | 5.7                         | 7.0    | 7.9     | 9.1     | 10.8     |
| A17E12_Rd1       | 0.8                      | 1.0    | 1.2     | 1.3     | 1.6      | 0.8                         | 1.0    | 1.2     | 1.3     | 1.6      |
| A17E13           | 4.9                      | 6.1    | 6.9     | 7.9     | 9.4      | 4.9                         | 6.1    | 6.8     | 7.8     | 9.3      |
| A17E13_Rd1       | 0.6                      | 0.7    | 0.8     | 0.9     | 1.1      | 0.6                         | 0.7    | 0.8     | 0.9     | 1.1      |
| A17E2            | 10.4                     | 13.0   | 14.8    | 17.0    | 20.3     | 10.2                        | 12.8   | 14.6    | 16.8    | 20.2     |
| A17E3            | 13.3                     | 16.5   | 18.6    | 21.2    | 25.2     | 12.5                        | 16.0   | 18.1    | 20.7    | 24.8     |
| A17E4            | 4.6                      | 5.7    | 6.5     | 7.5     | 9.0      | 4.5                         | 5.7    | 6.5     | 7.5     | 9.0      |
| A17E5            | 7.0                      | 8.9    | 10.1    | 11.7    | 14.0     | 7.0                         | 8.8    | 10.0    | 11.6    | 13.9     |
| A17E5_Rd         | 1.2                      | 1.4    | 1.6     | 1.9     | 2.2      | 1.1                         | 1.4    | 1.6     | 1.8     | 2.2      |
| A17E6            | 4.2                      | 5.2    | 5.8     | 6.7     | 7.9      | 4.0                         | 5.1    | 5.7     | 6.5     | 7.8      |
| A17E7            | 1.1                      | 1.4    | 1.6     | 1.8     | 2.1      | 1.0                         | 1.4    | 1.5     | 1.8     | 2.1      |
| A17E7_Rd         | 1.1                      | 1.4    | 1.6     | 1.8     | 2.2      | 1.0                         | 1.4    | 1.5     | 1.8     | 2.2      |
| A17E8            | 4.4                      | 5.5    | 6.2     | 7.1     | 8.4      | 4.4                         | 5.5    | 6.2     | 7.1     | 8.4      |
| A17E8_Rd         | 1.0                      | 1.3    | 1.4     | 1.6     | 1.9      | 0.9                         | 1.3    | 1.4     | 1.6     | 1.9      |
| A17E9            | 9.2                      | 11.4   | 12.8    | 14.6    | 17.4     | 9.1                         | 11.4   | 12.8    | 14.6    | 17.4     |
| A17E9_Rd         | 0.7                      | 0.9    | 1.0     | 1.1     | 1.3      | 0.7                         | 0.9    | 1.0     | 1.1     | 1.3      |
| C1               | 74.4                     | 96.6   | 111.6   | 130.3   | 158.2    | 74.0                        | 96.4   | 111.5   | 130.3   | 158.2    |